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ABSTRACT

A study investigated the influence of information technology (IT) industry-sponsored credentials commonly called IT certifications (ITCs) from both organizational and individual perspectives. Findings indicated that there was increasing acceptance, prevalence, and benefits of ITCs in business and industry. Both executives and employees reported that ITCs were of great benefit in the recruitment and job application process indicating not only specific IT knowledge and skill but also motivation and attitude. Other research studies reported similar findings that more and more IT employees have ITCs as part of their qualifications and that HR personnel and employers value ITCs as a helpful employee selection tool. Of equal importance, the studies revealed possible negative impacts such as: (1) ITCs may or may not increase the likelihood of employee turnover; (2) ITCs might actually reduce IT employees' creative problem-solving abilities; and (3) ITCs may reflect only paper-and pencil performance and not hands-on application of IT skills. Generally, research about ITCs indicated that they would remain a valued, if debated, credential in the future. (The bibliography lists 20 references.) (AJ)

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IN BRIEF

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Industry-Sponsored Credentials

no. 23 2003

by Michael E. Wonacott

Based on ***The Perceived Influence of Industry-Sponsored Credentials in the Information Technology Industry*** *by Kenneth Bartlett (St. Paul, MN: National Research Center for Career and Technical Education, 2002; https://www.nccte.org/publications/secure/index.asp#PerceivedInfLuence).*

Bartlett reported the results of a survey of a sample of human resource (HR) executives in organizations with a large number of information technology (IT) employees and of a web-based survey of IT employees in a sample of those organizations. Many of Bartlett's findings were strongly echoed in the business and industry literature on IT credentials, in which they are typically called *IT certifications* (ITCs), although there is relatively little coverage of IT credentials in the traditional education literature. This ***In Brief*** illustrates Bartlett's findings on IT credentials with examples of the same or similar themes found in the literature.

Summary of Survey Findings

Bartlett found increasing acceptance, prevalence, and benefits of IT certifications in business and industry. For example, HR executives reported that more and more IT job applicants had ITCs and that almost half of their current employees had at least one ITC; about two-thirds of responding IT employees reported that they had one or more ITCs. Both HR executives and IT employees reported that ITCs were of great benefit in the recruitment and job application process; both felt that an ITC was a clear signal of not only specific IT knowledge and skills but also of desirable motivation and attitude. On the other hand, just over half of Bartlett's IT employee respondents said that they believed that ITCs increased the likelihood of employee turnover, and only one in eight IT employees reported that ITCs improved their understanding of critical IT issues. Similarly, most HR executives reported that ITCs actually reduced IT employees' creative problem-solving abilities.

Prevalence, Acceptance, and Positive Effects

Discussion in the educational literature focused to a great extent on various differences between ITCs and traditional educational credentials. For example, McCain (2001) contrasted the typical static, institutionally controlled educational process in which credentials certify completion of courses and programs of study with a dynamic, ongoing, learner-centered process in which credentials certify learner competency in specific knowledge or skill, regardless of where or how the competency was acquired. Adelman (2000) explained that ITCs were not awarded by traditional postsecondary education institutions but by third-party examination, citing the figure of 3 million assessments conducted at 5,000 sites in 140 countries in 1999, with a cumulative total of 1.7 million credentials awarded as of January 2000.

The business and industry literature was full of stories that indirectly illustrate the increasing prevalence of ITCs. Indeed, one clear theme was the spread of IT certification into new areas. For example, Schick (2002) summarized a debate on the desirability of IT certification for chief information officers (CIOs); a growing body of opinion supported the idea that CIOs needed not only IT-specific knowledge and skills but also a broader understanding of how IT and corporate strategy interacted, so they could "be a business leader first and a technical IT leader second" (p. 26). Another interdisciplinary certification was the new Certified Information Technology Professional certificate issued by the American Institute of Certified Public Accountants, which focuses on the intersection of IT and finance, bridging the gap between the two functions so that each could better support the organization's strategic agenda (Colkin 2002). Likewise, the Project Management Institute's Project Management Professional (PMI/PMP) certification, which brought an average salary bonus of 14 percent according to 2001 survey data, was highly regarded even though it was difficult, required 4,500 hours of on-the-job project management experience, and was generic rather than IT specific (Vaas 2002c).

The increasing prevalence of ITCs was also indirectly illustrated by reports of new training programs to prepare individuals for ITC testing. Bolan (2001) described the Secondary Information Technology Support Associate Program launched by the British Columbia Ministry of Education and the Secondary School Apprenticeship program in 3 schools with 75 students; program completers would leave with a high school diploma, a year of industry experience, and five IT certifications (INET, INET+, Network, A+, and Microsoft or Cisco). Another program, Information Technology Fundamentals (ITF), was developed at Arizona State University in collaboration with Cisco Systems for low-income adult learners, who often had only a high school diploma or less and lacked the minimum computer skills needed for success in higher-level network certification curriculum ("Online Program" 2002). Now offered free online, ITF provides high school students and low-income adults with a basic understanding of computers and how they work to prepare them for advanced computer and networking classes to get Cisco Certified Network Associate certification.

An even more extensive program ("Prosoft, CompTIA Anticipate" 2001) was launched by the Interagency Industry-Based Certification Council of the Governor's Office of the Workforce Commission of Louisiana, which adopted four IT certification programs as standards for statewide workforce development efforts. As a result, displaced workers and other eligible Workforce Investment Act (WIA) recipients can use WIA Individual Training Account vouchers to participate in training programs for ProsoftTraining's Certified Internet Webmaster, the Computing Technology Industry Association (CompTIA) A+, Certified Cisco Network Associate, and Microsoft Office User Specialist certification. Other states reported to be implementing similar programs include Alaska, Virginia, and New Jersey. Exodus IT Services, a private employer, provided a U.S. Department of Labor-approved apprenticeship program in network services to prepare entry-level employees for CompTIA A+ and Network+ certification; the program used classroom instruction, task lists, and instructional standards and methodologies developed by CompTIA (Vaas 2002b).

However, the clearest theme in the literature directly echoed survey findings among both HR executives and IT employees on the primary benefit of ITCs as useful signals in the recruitment and selection process; the message appeared over and over again that an ITC gave applicants much greater visibility. IT aspirants in Thailand were advised that a university degree alone was not enough to get a job with a global high-tech firm—an IT certification helped them to stand out from the crowd and increased the prospects for salary and promotion ("An IT Boffin?" 2001). Success stories of Canadian Microsoft Certified Professional grads (Hilson 2002), ranging from newly hired desktop support specialists to entrepreneurs and 15- and 20-year IT veterans, led to the conclusion that

ITCs helped candidates get their foot in the door in the first place; in addition, they helped IT employees stay on the cutting edge and gave job mobility, whether or not IT employees were interested in changing jobs at the moment. ITCs were characterized as an excellent screening tool to assess job candidates (although degrees were reported to get more weight), especially if supplemented by a customized, employer-developed exam. And story after story told of IT job-seekers who got nowhere without an ITC. Even at the height of the dot.com boom, for example, one recent business management college graduate was not considered eligible for IT jobs without an entry-level IT certification, but CompTIA A+ certification helped him land a job (George 2002). And an IT director with 17 impressive years of experience and skills in COBOL, Java, Access, and SQL Server—but no certifications—found that he could not get a new job without one (Vaas 2002a); whether or not certifications genuinely represent technical knowledge and skills, as well as character and dedication, employers preferred them to taking an applicant's word for it.

Possible Negative Impacts

In Bartlett's survey, only one in eight IT employees reported that ITCs improved theoretical understanding of critical IT issues, and less than half of HR executives believed that ITCs increased employees' creative problem-solving abilities. Those findings are similar to another prominent theme in the business and industry literature on ITCs—the limitations of ITCs in signaling an IT applicant's possible value to an employer. Brandel (2002), for instance, pointed out that although ITCs had value in differentiating among applicants, work experience and evidence of value to a previous employer stood out more; what really made an applicant stand head and shoulders above the others was evidence the employee helped do something better, faster, or cheaper—not just those letters after the name. According to industry insiders, relatively few job postings (only 1 in 100, in one estimate) listed a particular certification as a requirement. And some certificates had more value than others; the certifications that spoke loudest to employers required extensive preparation or even documented hours of work experience—SAP R/3, Cisco Certified Internetworking Expert, Microsoft Certified Systems Engineer (MCSE), or PMI/PMP, for example.

Similarly, Chen (2000) used a hypothetical example of a new-hire MCSE sitting frozen and perplexed when the Web servers crashed to question the worth of ITCs without real-world, on-the-job problem-solving experience to back them up, particularly in the case of networking breakdowns. Furthermore, ITC seekers were often able to find exam questions and even answers and advice online; so test responses may or may not have reflected a genuine understanding of the content covered. Chen advised using the job interview for simulated networking problem-solving scenarios, taking ITCs as a signal of dedication and determination, and looking for ITCs based on extended, hands-on, problem-solving labs. On the other hand, one report of survey research ("THE LINK" 2002) showed that for the first time in 4 years, IT certification bonuses exceeded the average bonus for 83 stand-alone technical skills; the report speculated that the slowed economy may have made employers more reliant on certifications, rather than workers' self-marketing, as a good measure of not only IT skills but also commitment.

Discussion of ITCs and IT employee commitment and turnover reflects Bartlett's findings on those issues, which were somewhat equivocal: only a little more than half of IT employees believed that ITCs increased the likelihood of turnover, and there was a negative but not statistically significant association between the number of ITCs an IT employee had and the employee's level of organizational commitment. Some business and industry commentators (e.g., Darbe 2002) expressed concern about balancing the expense of certification training against the risk that certified IT professionals would use that training to get a better job elsewhere—and against the risk that *not* providing training might drive the good IT professionals away, leaving only marginal employees.

Other commentators told different stories, however. Leung (2002) reported on successful approaches to upgrading an IT operations group and systems through CompTIA A+ and Network+ and MCSE certification, which resulted in vastly improved network performance and staff turnover of less than 5 percent at one site. Tuesday (2002) reported that in spite of various ITCs, he would still send his staffers for certification training because it helped their resumes and morale—they would stick with a job that provided new skills, broadened their experience, and opened up more choices. Ghose (2002) reported that, of 17,800 IT professionals surveyed worldwide, more than 70 percent had *not* changed employers after receiving certification; in fact, employers reported greater loyalty and lower turnover.

Conclusion

All in all, the literature on ITCs presents a picture very similar to that found by Bartlett in his survey. More and more, it appears that IT employees have ITCs and that HR personnel and employers value ITCs as a helpful tool in recruiting and selecting IT employees—not the only tool, certainly, but an important one. Equally, ITCs may reflect only paper-and-pencil performance and not hands-on application of IT skills, and they may or may not affect IT employee turnover. In all likelihood, ITCs will remain a valued, if debated, credential in the future.

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